<u>Claims</u>

- 1. (Original) A composite article comprising a polyolefin layer, a tie-layer, and a non-polyolefin, wherein said tie-layer comprises a silicon modified polyolefin.
 - 2.(Original) The composite article of claim 1, wherein said tie-layer comprises:

$$\frac{\xi}{\xi} = R_1 - Si(R)_{3-z} - R_2 - Si(R)_{3-z} - R_1 - X_1$$

wherein represents a polyolefin segment;

R₁ independently for each occurrence represents an organic or inorganic moiety or a bond;

R₂ independently for each occurrence represents an organic moiety, an inorganic moiety, or a bond;

R independently for each occurrence represents an organic or inorganic moiety;

 X_1 independently for each occurrence represents an organic or inorganic moiety; and z represents the number of linkages between the $Si(R)_{3-z}$ moieties, and is an integer from 1 to 3.

3.(Original) The composite article of claim 1, wherein said silicon modified polyolefin comprises:

$$\frac{\xi}{\xi} = R_1 - \left\{ Si(R)_2 - R_1 \right\}_p Si(R)_2 - R_1 - X_1$$

wherein meresents a polyolefin segment;

R₁ independently for each occurrence represents an organic or inorganic moiety or a bond;

R independently for each occurrence represents an organic or inorganic moiety; X_1 independently for each occurrence represents an organic or inorganic moiety; and p is an integer from 0 to about 1000.

4.(Original) The composite article of claim 1, wherein said silicon modified polyolefin comprises

$$\begin{cases} Si(R) \longrightarrow R_1 \longrightarrow X_1 \end{cases}$$

wherein or represents a polyolefin segment;

R₁ independently for each occurrence represents an organic or inorganic moiety or a bond;

R independently for each occurrence represents an organic or inorganic moiety; and

 X_1 independently for each occurrence represents an organic or inorganic moiety.

- 5. (Original) The composite article of claim 2, wherein for each occurrence, R is selected independently from the group consisting of H, alkyl, alkenyl, alkynl, hydroxyl, alkoxy, halogen, aralkyl, aryl, heterocyclyl, polycyclyl, carbocycles, and heteroatoms.
- 6. (Original) The composite article of claim 5, wherein R is -O-alkyl or O-H.
- 7. (Original) The composite article of claim 2, wherein for each occurrence, R_1 and R_2 are selected independently from the group consisting of alkyl, alkenyl, and alkynyl, -O-, alkoxy, aryl, heterocyclyl, polycyclyl, carbocycles, and a bond.
- 8. (Original) The composite article of claim 2, wherein R₂ for each occurrence independently represents an acetyl moiety, alkyl ether, arylether, -O-, or a bond.
- 9. (Original) The composite article of claim 8, wherein R is selected independently for each occurrence from the group consisting of H, alkyl, alkenyl, alkynl, hydroxyl, alkoxy, halogen, aralkyl, aryl, heterocyclyl, polycyclyl, carbocycles, and heteroatoms.
- 10. (Original) The composite article of claim 8, wherein R_1 is selected independently for each occurrence from the group consisting of alkyl, alkenyl, alkynyl, alkoxy, and hydroxyl.
- 11. (Original) The composite article of claim 10, wherein z is 1.
- 12. (Original) The composite article of claim 10, wherein z is 2.
- 13. (Original) The composite article of claim 10, wherein z is 3.
- 14. (Original) The composite article of claim 2, wherein X_1 represents at least one moiety that is capable of bonding to said non-polyolefin.
- 15. (Original) The composite article of claim 14, wherein X_1 comprises a vinyl, epoxy or amine moiety.
- 16. (Original) The composite article of claim 3, wherein for each occurrence, R is selected independently from the group consisting of H, alkyl, alkenyl, alkynl, hydroxyl, alkoxy, halogen, aralkyl, aryl, heterocyclyl, polycyclyl, carbocycles, and heteroatoms.

- 17. (Original) The composite article of claim 16, wherein R is -O-alkyl or -O-H.
- 18. (Original) The composite article of claim 3, wherein R₁ is selected independently, for each occurrence, from the group consisting of alkyl, alkenyl, and alkynyl, -O-, alkoxy, aryl, heterocyclyl, polycyclyl, carbocycles, and a bond.
- 19. (Original) The composite article of claim 3, wherein X_1 represents at least one moiety that is capable of bonding to said non-polyolefin.
- 20. (Original) The composite article of claim 19, wherein X_1 comprises a vinyl, epoxy or amine moiety.
- 21. (Original) The composite article of claim 4, wherein for each occurrence, R₁ is selected independently from the group consisting of alkyl, alkenyl, and alkynyl, -O-, alkoxy, aryl, heterocyclyl, polycyclyl, carbocycles, and a bond.
- 22. (Original) The composite article of claim 21, wherein X_1 represents at least one moiety that is capable of bonding to said non-polyolefin.
- 23. (Original) The composite article of claim 22, wherein X_1 comprises a vinyl, epoxy or amine moiety.
- 24. (Original) A composite tube, comprising the composite article of claim 1.
- 25. (Original) A composite tube that comprises a polyolefin layer, and a composite layer, wherein the polyolefin layer is bonded to the composite layer through a tie-layer, wherein the tie-layer comprises a silicon moiety.
- 26. (Original) A method for adhering a polyolefin to a non-polyolefin, comprising: providing a silicon modified polyolefin, contacting said silicon modified polyolefin with a coupling agent to form a tie-layer,

contacting the tie-layer to a non-polyolefin and a polyolefin to form a composite structure, and

exposing the composite structure to conditions sufficient to create adhesion between the polyolefin and the non-polyolefin.

- 27. (Original) The method of claim 26, wherein said coupling agent comprises a silane moiety.
- 28. (Original) A method for adhering a polyolefin to a non-polyolefin, comprising: providing a polyolefin modified with a reactive moiety, contacting the modified polyolefin with a silane coupling agent to form a tie-layer,

contacting the tie-layer to a non-polyolefin and a polyolefin to form a composite structure, and

exposing the composite structure to conditions sufficient to create adhesion between the polyolefin and the non-polyolefin.

- 5 -